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18 SEP 2017

Hybrid Driving-Flying Robots Could Go Beyond the Flying Car

By GANESH MARTIN

MORE Partner Series Hybrid Driving-Flying Robots Could Go Beyond the Flying Car A quadcopter drone with wheels attached so it can fly and drive. Credit: Brandon ArakiMIT CSAIL Whether they're swooping in to deliver packages or spotting victims in disaster zones, swarms of flying robots could have a range of important applications in the future, a new study found. The robots can transition from driving to flying without colliding with each other and could offer benefits beyond the traditional flying-car concepts of sci-fi lore, the study said.

The ability to both fly and walk is common in nature. For instance, many birds, insects and other animals can do both.

Robots with similar versatility could fly over impediments on the ground or drive under overhead obstacles. But currently, robots that are good at one mode of transportation are usually bad at others, study lead author Brandon Araki, a roboticist at the Massachusetts Institute of Technology's Computer Science and Artificial Intelligence Laboratory, and his colleagues said in their new study. The 6 Strangest Robots Ever Created The researchers previously developed a robot named the "flying monkey" that could run and fly, as well as grasp items. However, the researchers had to program the paths the flying monkey would take; in other words, it could not find safe routes by itself.

Now, these scientists have developed flying cars that can both fly and drive through a simulated city-like setting that has parking spots, landing pads and no-fly zones. Moreover, these drones can move autonomously without colliding with each other, the researchers said. "Our vehicles can find their own safe paths," Araki told Live Science.

The researchers took eight four-rotor "quadcopter" drones and put two small motors with wheels on the bottom of each drone, to make them capable of driving. In simulations, the robots could fly for about 295 feet (90 meters) or drive for 826 feet (252 meters) before their batteries ran out.

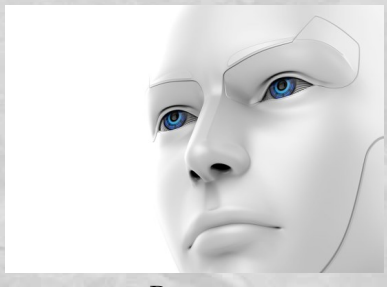
The roboticists developed algorithms that ensured the robots did not collide with one another. In tests in a miniature town made using everyday materials such as pieces of fabric for roads and cardboard boxes for buildings, all drones successfully navigated from a starting point to an ending point on collision-free paths.

Adding the driving apparatus to each drone added weight and so slightly reduced battery life, decreasing the maximum distances the drones could fly by about 14 percent, the researchers said. Still, the scientists noted that driving remained more efficient than flying, offsetting the relatively small loss in efficiency in flying due to the added weight.

"The most important implication of our research is that vehicles that combine flying and driving have the potential to be both much more efficient and much more useful than vehicles that can only drive or only fly," Araki said.

The scientists cautioned that fleets of automated flying taxis are likely not coming anytime soon. "Our current system of drones certainly isn't robust enough to actually carry people right now," Araki said. Still, these experiments with quadcopters help explore "various ideas related to flying cars," he said.

The scientists detailed their findings on June 1 at the Institute of Electrical and Electronics Engineers' International Conference on Robotics and Automation in Singapore.



Reuters

International Moose Count Underway

By BOB O'BOBSTON

The UN-sponsored International Moose Census got off to a flying start today with hopes for an increase in the worldwide moose population compared to last year's disapointing figures. Among the traditional early reporters were Egypt, returning figures of six moose, a twenty percent increase on 2011's figures of five, and Uruguay whose moose population remains stable at eleven.

According to Robbie McRobson, head of the UN Moose Preservation Council, worldwide moose numbers are expected to grow markedly on last year due to the traditional moose strongholds of Canada and the United States, with the larger developing moose ecologies also poised to make gains. The largest percentagege increase in moose will likely come from China'', says McRobson, The Chinese government has invested heavily in moose infrastructure over the past decade, and their committment to macrofauna is beginning to pay dividends''. Since 2004 China has expanded moose pasture from 1.5% of arable land to nearly 3.648% and moose numbers are expected to rise to 60,000 making China a net moose

exporter for the first time. This is good news for neighbouring Mongolia, a barren moose-wasteland whose inhabitents nonetheless have an insatiable desire for the creatures. The increase in Beijing-Ulanbataar trade is anticipated to relieve pressure on the relatively strained Russian suppliers, but increase Mongolia's imbalance of trade with its larger neighbour.

Historically the only competitor to China in the far eastern moose markets has been Singapore but the tiny island nation is set to report a net loss, expecting a decrease of more than five percent on last year's 50,000 moose counted. The head of Singapore's Agency for Agriculture, Jing-Feng Lau, explained to an incredulous Singaporean parliament yesterday that bad weather had contributed to this season's poor showing, most notably when a cargo of 150 moose were swept out into the Indian ocean in a monsoon.

Yet again the global demand for moose will be met largely by the US and Canada. The recession-hit States is taking comfort in its moose growth figures with gross production expected to break 700,000 and net exports to grow by 2%. The worldwide dominance of Canada shows no signs of abating though with this year's moose population expected to match last year's record figures of one hundred million billion.

Europe's rise as an international moose power will slow slightly this year as a response to the European Union's move towards standardising the European moose. Stringent quality controls are holding back the development of the eastern european populations compared to last year when they contributed significantly to europe's strong growth figures. Norway, which is not an EU member but has observer status, strengthed in numbers relative to the Euro area with numbers of Norweigian moose, known locally as elk'' expected to rise for the tenth consecutive year, particularly thanks to a strong showing in the last quarter.

As moose season reaches its close, researchers world wide are turning to science in an attempt to boost next year's figures. NASA stunned the scientific community today with the announcment of their discovery that the moon is significantly smaller than previously believed. This conclusion, which is the conclusion of a ten-year collaborative project, will have profound implications for the moose community as the gravitational field is now known to be of the right strength to support moose in orbit.

According to John Johnson, head of the NASA Moon Sizing Experiment the first delivery of moose into low moon orbit could be achieved as early as the third quarter of next year. The technology to nurture moose in space is available now'', he said, ''all that is needed is political will''.

Granny wins World Wrestling Championship

By ROY MCROYSTON

Records were smashed in Nicaragua's World Wrestling Championship last night as 78-year-old Maud Johnson, grandmother of five, became the first woman for fifty-six years, and the oldest competitor ever, to claim the gold medal. She walked away with her million dollar share of the prize money, runner up Tommy Thompson from Nigeria taking half a million, and third place New Zealander John Smith receiving a warm handshake from the umpire.

Having started the tournament a rank outsider she began to impress in her second match when she took US number three Ron Ronson by surprise and subdued him in twenty seconds with her unique move that has been dubbed "Maud's Death Grip". The injection of a new wrestling style into the tournament was welcomed by spectators and Johnson's pre- and post-match breakdances have proved entertaining to fans. However, she was still not expected to win in round three last Wednesday, facing off against title-holder Paulo "Spine-Snapper" Lutti, of Vatican City. Underdog Johnson was soon showing her worth with stamina and agility easily matching last year's winner. Lutti's experience paid off initially as he took the first two rounds, but as Johnson became more confident her superior strength came to the fore and she clawed back two rounds to take the contest into a decider. By this time Lutti's body language indicated that he already felt overawed by the pretender to his crown, and the newcomer took advantage of this to engage a mutual headlock which she held for three hours until the Vatican man retired from exhaustion. The next seven matches were barely a contest as the news of Johnson's supremacy overawed all her opponents who became too indimidated to fight properly.

Nigerian Tommy Thompson is also a relative newcomer to the wrestling scene, but with his 210lb frame he was expected to fare well against Johnson who weighs in at only 90lb. However Johnson's lithe and slender, some would say scrawny, figure belies her agility and strength which she demonstrated by holding Thompson above her head several times during the bout and throwing him into the crowd once. With the scores tied at 2-2 time ran out and the contest went to a panel of judges to be assessed. They awarded Thompson a C grade whilst Johnson received an A, becoming the first grandmother to ever win the title.

The new champion explained her success as the result of a strict training regimen instituted by her coach and grandson five-year-old Sammy Johnson. "I've been drinking ten raw eggs for breakfast every morning, sprinting fifty miles a day and carrying my daughter's car to the end of the road and back whenever I felt my arthritis was OK" she said. Sammy added "I always knew she could do it. She's my grandma.". The youngster is also her manager and has reportedly arranged sponsorship deals which will dwarf her one million dollar prize fund. Her new contract with headband designer Nike alone is set to earn her fourteen billion dollars over the next year. She will also be promoting Tupperware, Halliburton, the Republic of Macedonia, and Gala Bingo. Her continued participation in the sport is not assured as she wants to spend more time on her bungee-jumping business, and knitting. Everyone here at the World Championships, however, hopes for her return.